CARRIER FREQUENCY OFFSET ESTIMATION IN A WIRELESS COMMUNICATION SYSTEM

Abstract of the Disclosure

An OFDM receiver comprises a demodulator configurable for receiving a passband signal including a plurality of symbols, at least one of the symbols being a reference symbol, and for converting the passband signal to a baseband signal, a CFO compensation circuit configurable for receiving the baseband signal and modifying a phase of the baseband signal in response to a first control signal, a transformation circuit configurable for translating the baseband signal from the CFO compensation circuit into a frequency domain constellation, an equalizer configurable for receiving the frequency domain constellation and modifying the frequency domain constellation based at least in part on the reference symbol, and a CFO estimation circuit operatively coupled between an output of the equalizer and the CFO compensation circuit in a feedback configuration. The CFO estimation circuit is configurable for measuring a difference in phase error between at least two symbols received from the equalizer and for generating the first control signal, the first control signal being representative of the measured phase error difference.